

Abstract

A fiberoptic system for communicating between a central office and a downstream station, wherein the central office has a TX unit, an RX unit and a continuous wave ("CW") laser, and each station has an RX unit and a tunable filter. The downstream station's tunable filter is placed between its RX unit and the central office. During downstream transmission, the station's tunable filter is tuned to the wavelength of the central office's TX unit so that the signal transmitted by the central office will pass through the filter and be received by the station's RX unit. During upstream transmission, the station's tunable filter is selectively tuned to a wavelength different than the wavelength of the central office's CW laser, so that the station's tunable filter will selectively reflect light from the CW laser back to the central office. By selectively tuning the station's tunable filter, the tunable filter can be used to modulate the light being reflected back to the central office, whereby to effectively create an upstream transmission from the downstream station to the central office.

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